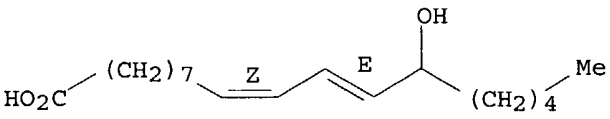
L1 ANSWER 2 OF 2 REGISTRY COPYRIGHT 2004 ACS on STN
RN 18104-45-5 REGISTRY
CN 9,11-Octadecadienoic acid, 13-hydroxy-, (9Z,11E)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 9,11-Octadecadienoic acid, 13-hydroxy-, (E,Z)- (8CI)
OTHER NAMES:
CN (±)-Coriolic acid
CN (9Z,11E)-13-Hydroxy-9,11-octadecadienoic acid
CN α-Artemisolic acid
CN **13-HODE**
CN 13-Hydroxy-9,11-cis,trans-octadecadienoic acid
CN 13-Hydroxy-9-cis-11-trans-octadecadienoic acid
CN 13-Hydroxy-cis-9-trans-11-octadecadienoic acid
CN 13-Hydroxylinoleic acid
CN 13-Hydroxyoctadeca-9,11-dienoic acid
FS STEREOSEARCH
DR 67030-67-5, 73804-64-5, 81445-95-6
MF C18 H32 O3
LC STN Files: AGRICOLA, BEILSTEIN*, BIOSIS, CA, CANCERLIT, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CSCHEM, MEDLINE, TOXCENTER, USPAT2, USPATFULL
(*File contains numerically searchable property data)
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); PROC (Process); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RLD.NP Roles for non-specific derivatives from non-patents: BIOL (Biological study)

Double bond geometry as shown.

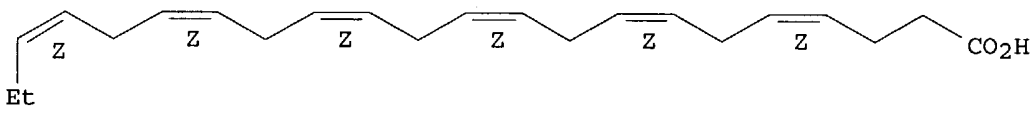


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

286 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
288 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L9 ANSWER 151 OF 157 REGISTRY COPYRIGHT 2004 ACS on STN
RN 6217-54-5 REGISTRY
CN 4,7,10,13,16,19-Docosahexaenoic acid, (4Z,7Z,10Z,13Z,16Z,19Z)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 4,7,10,13,16,19-Docosahexaenoic acid, (all-Z)- (8CI)
CN Docosahexaenoic acid (6CI)
OTHER NAMES:
CN (4Z,7Z,10Z,13Z,16Z,19Z)-4,7,10,13,16,19-Docosahexaenoic acid
CN (4Z,7Z,10Z,13Z,16Z,19Z)-Docosahexaenoic acid
CN (all-Z)-4,7,10,13,16,19-Docosahexaenoic acid
CN Δ4,7,10,13,16,19-Docosahexaenoic acid
CN 4-cis,7-cis,10-cis,13-cis,16-cis,19-cis-Docosahexaenoic acid
CN all-cis-4,7,10,13,16,19-Docosahexaenoic acid
CN all-Z-Docosahexaenoic acid
CN Cervonic acid
CN **DHA**
CN Doconexent
FS STEREOSEARCH
DR 25377-50-8
MF C22 H32 O2
CI COM
LC STN Files: ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CIN, CSCHEM, EMBASE, IMSRESEARCH, MRCK*, PROMT, SYNTHLINE, TOXCENTER, USAN, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: WHO
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Double bond geometry as shown.

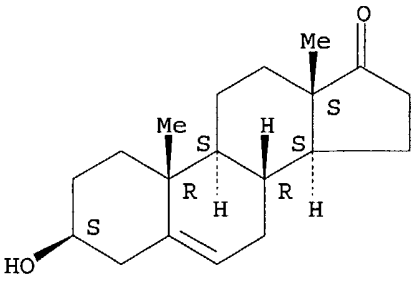


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

8181 REFERENCES IN FILE CA (1907 TO DATE)
145 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
8215 REFERENCES IN FILE CAPLUS (1907 TO DATE)
9 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

(Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)

Absolute stereochemistry. Rotation (+).

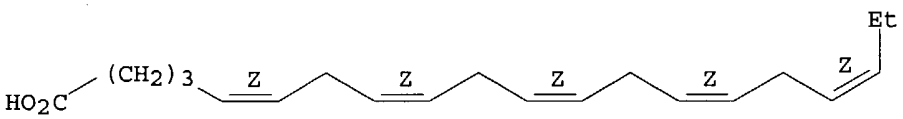


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7362 REFERENCES IN FILE CA (1907 TO DATE)
155 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7372 REFERENCES IN FILE CAPLUS (1907 TO DATE)
93 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L15 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN
RN 10417-94-4 REGISTRY
CN **5,8,11,14,17-Eicosapentaenoic acid, (5Z,8Z,11Z,14Z,17Z)- (9CI)**
(CA INDEX NAME)
OTHER CA INDEX NAMES:
CN **5,8,11,14,17-Eicosapentaenoic acid (6CI)**
CN **5,8,11,14,17-Eicosapentaenoic acid, (all-Z)- (8CI)**
OTHER NAMES:
CN **(5Z,8Z,11Z,14Z,17Z)-Eicosapentaenoic acid**
CN **(all-cis)-5,8,11,14,17-Eicosapentaenoic acid**
CN **(all-Z)-Δ5,8,11,14,17-Eicosapentaenoic acid**
CN **(all-Z)-5,8,11,14,17-Eicosapentaenoic acid**
CN **Eicosapentaenoic acid**
CN **EPA**
CN Icosapent
CN Icosapentaenoic acid
CN Timnodonic acid
FS STEREOSEARCH
DR 25377-48-4
MF C20 H30 O2
CI COM
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMLIST, CIN, CSCHEM, DDFU, DRUGU, EMBASE, IFICDB, IFIUDB, IMSDRUGNEWS, IMSRESEARCH, MRCK*, PHAR, PROMT, TOXCENTER, USAN, USPAT2, USPATFULL, VETU
(*File contains numerically searchable property data)
Other Sources: WHO
DT.CA CAplus document type: Conference; Dissertation; Journal; Patent; Report
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
RLD.P Roles for non-specific derivatives from patents: BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses)
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Double bond geometry as shown.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7667 REFERENCES IN FILE CA (1907 TO DATE)
176 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
7691 REFERENCES IN FILE CAPLUS (1907 TO DATE)
6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

Dietary Fat

Essential Fatty Acids in Oils, Omega-3 & Omega-6 EFAs in Nuts, Linoleic Acid & Alpha-Linolenic Acid in Seeds
Table Showing Omega Fats in Oils, Nuts & Seeds, Omega-3:6 Balance

Omega-3 and Omega-6 Essential Fatty Acids

Diet Home - Dietary Fat Explained - Anne Collins Diet - Weight Loss Tips - Obesity

Essential Fatty Acids in OILS

Fig 1. Content of Omega-3 and Omega-6 Essential Fatty Acids in Oils

Approximate EFA content in grams per 100 grams

Omega-3s (100g)	(g)	**Omega-6s (100g)**	(g)
Flax / Linseed oil	58	Safflower oil	74
Flax / Linseeds	15-30	Grapeseed oil	68
Walnut oil	11.5	Sunflower oil	63
Canola / Rapeseed oil	7	Walnut oil	58
Soybean oil	7	Soybean oil	51
Wheatgerm oil	5	Corn oil	50

Essential Fatty Acids in NUTS

Fig 2. Content of Omega-3 and Omega-6 Essential Fatty Acids in Nuts

Approximate EFA content in grams per 100 grams

Omega-3s (100g)	(g)	**Omega-6s (100g)**	(g)
Walnuts	5.5	Walnuts	28
Hazelnuts	trace	Hazelnuts	4
Cashews	trace	Cashews	8
Almonds	trace	Almonds	10
Brazils	trace	Brazils	23

Essential Fatty Acids in SEEDS

Fig 3. Content of Omega-3 and Omega-6 Essential Fatty Acids in Seeds

Approximate EFA content in grams per 100 grams

Omega-3s (100g)	(g)	**Omega-6s (100g)**	(g)
Flax / Linseeds	15-25	Flax / Linseeds	6
Pumpkin seeds	7-10	Pumpkin seeds	20
Sunflower seeds	trace	Sunflower seeds	30
Sesame seeds	trace	Sesame seeds	25
Pine nuts	1	Pine nuts	25

Weight Loss & Fats

From a calorie viewpoint, all oils are equally fattening.
They contain 120 calories per tablespoon.

For optimum weight loss, reduce your overall fat/oil consumption to a sensible level: 25-30 percent of calories is very good; although 20-25 per cent is better; while fats expert *Udo Erasmus* advocates 15-20 per cent.

Restrict your consumption of saturated fat to a minimum.

Anne Collins Diet Program can help you reduce your fat intake and lose weight. It also shows you how to eat sensibly and control your weight for life.

Omega-3 - Omega-6 - Fish Oils - Fish Oils Table
Healthiest Fats/Oils - Olive Oil & Weight Loss - Trans-Fats
Saturated Fat - Monounsaturated Fat - Polyunsaturated Fat

Diet Home

Anne Collins Weight Loss Programs
WEIGHT LOSS DIET PROGRAM AT-A-GLANCE | WEIGHT LOSS PROGRAM EXPLAINED | JOIN WEIGHT LOSS PROGRAM | QUICK-START DI
LOW CARB DIET | 14-DAY WEIGHT LOSS BOOSTER DIET | WEIGHT LOSS DIET FOR BUSY PEOPLE | 6 USA DIETS | VEGETARIAN DIET PLA
UK/BRITISH DIET | DIET FOOD MENUS | HOW DIETERS DESCRIBE ANNE COLLINS WEIGHT LOSS PROGRAM | WEIGHT LOSS SUPPORT

Obesity, Health and Weight
WEIGHT HEALTH RISKS | OBESITY INFORMATION | OBESITY CHART | BODY MASS INDEX CALCULATOR | WEIGHT CHART | HEALTHY WE
IDEAL WEIGHT FOR WOMEN | IDEAL WEIGHT FOR MEN | WAIST CIRCUMFERENCE | WAIST-HIP RATIO | HOW TO REDUCE CELLULITE FAT
BODY FAT PERCENT | BODY FAT, WEIGHT & HEALTH | BODY FAT CALCULATORS | WEIGHT LOSS PLATEAU | HYPOTHYROIDISM | CRAVI
RAISE METABOLISM | EXERCISE & WEIGHT LOSS | EXERCISE EQUIPMENT | DIET FITNESS | ATKINS DIET HEALTH | CHOLESTEROL & DIE
CHOLESTEROL FAT & DIET | LOW CHOLESTEROL DIET | DIABETIC DIET INFORMATION | DIABETIC DIET QUESTIONS | GLUCOSE METERS

Weight Loss and Diet Information
WEIGHT LOSS TIPS | WEIGHT LOSS ADVICE | DIETS & WEIGHT LOSS PROGRAMS | WEIGHT LOSS QUESTIONS | DIET PROGRAMS | FAD D
WEIGHT LOSS DIETS - THE BIG QUESTIONS | LOSE WEIGHT FAST | WEIGHT LOSS FOR VEGETARIANS | HEALTHY DIET | FAST WEIGHT L
WEIGHT LOSS PILLS | DIET PILLS | APPETITE SUPPRESSANTS | FENTERMINE WEIGHT LOSS PILLS | WEIGHT WATCHERS DIET | LOW FA
LOW CARB DIETS | SOUTH BEACH DIET PROGRAM - RECIPES | DR ATKINS DIET | ATKINS DIET OPINIONS | ONLINE DIETS | WEIGHT LOSS
WEIGHT LOSS ARTICLES | DIET ADVICE FOR STAR SIGNS | WEIGHT LOSS DIET ADVICE | WEIGHT LOSS - PREGNANCY | SLIMMING DIET
WEIGHT CONTROL IN MENOPAUSE | DIET & WEIGHT LOSS NEWS | CABBAGE SOUP DIET | CIDER VINEGAR DIET | WEIGHT LOSS PYRAMI
BARIATRIC SURGERY | GASTROINTESTINAL SURGERY | WEIGHT LOSS PROGRAMS | WEIGHT LOSS FACTS | DIETS | WEIGHT LOSS LINK

Diet Nutrition, Calories, Carbs and Diet Information
DIET NUTRITION | CALORIES INDEX | EXERCISE & CALORIES BURNED | CALORIE NEEDS FOR WOMEN | CALORIE NEEDS MEN | DIET FAT
HOW TO LOSE WEIGHT | CALORIES & WEIGHT LOSS | BURN CALORIES & LOSE WEIGHT | CALORIE SAVINGS | DIET FOODS | CARBS & DI
PROTEIN & DIET | PROTEIN DIET NEEDS | GLYCEMIC INDEX | SODIUM IN DIET | BALANCED DIET | VEGETARIAN DIET NUTRITION | TERMS

Anne Collins Diet
"The Best Value Weight Loss Diet Program on the Internet"
JOIN NOW and CHANGE YOUR LIFE

L21 ANSWER 4 OF 30 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1994:301576 BIOSIS
DOCUMENT NUMBER: PREV199497314576
TITLE: 13-Hydroxyoctadecadienoic acid reverses epidermal hyperproliferation via selective inhibition of protein kinase C-beta activity.
AUTHOR(S): Cho, Yunhi; Ziboh, Vincent A.
CORPORATE SOURCE: Dep. Dermatol., Univ. Calif., Davis, CA 95616, USA
SOURCE: Biochemical and Biophysical Research Communications, (1994) Vol. 201, No. 1, pp. 257-265.
CODEN: BBRCA9. ISSN: 0006-291X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 13 Jul 1994
Last Updated on STN: 24 Aug 1994

AB 13-Hydroxyoctadecadienoic acid (**13-HODE**) is a major lipoxygenase metabolite of linoleic acid in epidermis. Employing a **docosahexaenoic acid** (22:6n-3) induced model of hyperproliferative guinea pig epidermis, we demonstrated reversal of hyperproliferation by topical **13-HODE**. To delineate a possible mechanism for **13-HODE** effect, we demonstrated that topical **13-HODE** was incorporated into **13-HODE**-containing diacylglycerol (**13-HODE**-DAG). This novel substituted-DAG which was markedly depleted in the hyperproliferative skin paralled the increased activities of PKC-alpha and beta. Replenishment of the hyperproliferative epidermis with topical **13-HODE** resulted in the accumulation of tissue **13-HODE**-DAG and the selective suppression of PKC-beta activity. These data taken together suggest that the generation of putative **13-HODE**-DAG and the selective suppression of PKC-beta isozyme activity may play a role in modulating epidermal hyperproliferation.

L24 ANSWER 12 OF 32 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1990:513771 BIOSIS
DOCUMENT NUMBER: PREV199090131047; BA90:131047
TITLE: SELECTIVE EFFECTS OF DIETARY FATS ON VASCULAR **13-HODE** SYNTHESIS AND PLATELET-VESSEL WALL INTERACTIONS.
AUTHOR(S): BERTOMEU M C [Reprint author]; CROZIER G L; HAAS T A; FLEITH M; BUCHANAN M R
CORPORATE SOURCE: MCMASTER UNIV, DEP PATHOL, HAMILTON, ONT, CAN
SOURCE: Thrombosis Research, (1990) Vol. 59, No. 5, pp. 819-830. CODEN: THBRAA. ISSN: 0049-3848.
DOCUMENT TYPE: Article
FILE SEGMENT: BA
LANGUAGE: ENGLISH
ENTRY DATE: Entered STN: 19 Nov 1990
Last Updated on STN: 20 Nov 1990

AB **Fish** oil (FO) diets are associated with decreased thrombosis, which is thought to be related, in part, to changes in platelet and vessel wall prostanoid synthesis. Recently, we found that 13-hydroxyoctadecadienoic acid (**13-HODE**) synthesized in the vessel wall from linoleic acid (LA, 18:2 n-6) via the lipoxygenase pathway, also decreases platelet/vessel wall interactions. Thus, we determined whether diets containing **fish** oil, walnut oil (rich in linoleic acid), black currant seed oil (rich in both linoleic and gamma linolenic acids, 18:3 n-6), or lard influenced vessel wall **13-HODE** synthesis and platelet/vessel wall adhesion in rabbits. In vivo, vessel wall thrombogenecity was decreased in animals fed the black currant seed oil rich diet for 4 weeks as compared to the control "LARD" diet. This latter effect was better obtained when γ linoleic acid was present suggesting a secondary effect of this fatty acid. The decreased vessel wall thrombogenecity in those animals, was associated with increased vessel wall **13-HODE** synthesis. In contrast, ex vivo platelet adhesivity was significantly decreased in the **fish** oil diet fed animals, as compared to the control "LARD" diet and correlated with decreased platelet 12-HETE synthesis. We conclude that both **fish** oil and black currant seed oil rich diets inhibit platelet/vessel wall adhesion; the black currant seed oil diet by increasing the availability of linoleic acid for **13-HODE** synthesis and inhibiting vessel wall thrombogenecity; the **fish** oil diet by inhibiting platelet 12-HETE synthesis and subsequent platelet adhesion.

IT Major Concepts
Blood and Lymphatics (Transport and Circulation); Cardiovascular System (Transport and Circulation); Metabolism; Nutrition
IT Miscellaneous Descriptors
RABBIT 13 HYDROXYOCTADECADIENOIC ACID LINOLEIC ACID THROMBOGENESIS
ORGN Classifier
Leporidae 86040
Super Taxa
Lagomorpha; Mammalia; Vertebrata; Chordata; Animalia
Taxa Notes
Animals, Chordates, Lagomorphs, Mammals, Nonhuman Vertebrates, Nonhuman Mammals, Vertebrates
RN 60-33-3 (LINOLEIC ACID)

L24 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1990:117061 CAPLUS
DOCUMENT NUMBER: 112:117061
TITLE: Guinea pig epidermis generates putative anti-inflammatory metabolites from **fish** oil polyunsaturated fatty acids
AUTHOR(S): Miller, Craig C.; Yamaguchi, Ronald Y.; Ziboh, Vicent A.
CORPORATE SOURCE: Sch. Med., Univ. California, Davis, CA, 95616, USA
SOURCE: Lipids (1989), 24(12), 998-1003
CODEN: LPDSAP; ISSN: 0024-4201
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Clin. studies have indicated that dietary **fish** oil may have therapeutic value in the treatment of psoriasis, a hyperproliferative, inflammatory skin disorder characterized by elevated LTB4. To evolve a possible mechanism for these beneficial effects, the metabolic fate of **fish** oil-derived n-3 fatty acids was determined in the skin. Specifically, guinea pig epidermal enzyme prepns. were incubated with [3H]eicosapentaenoic acid (20:5n-3) and [14C]docosahexaenoic acid (22:6n-3). Analyses of the radiometabolites revealed the transformation of these n-3 fatty acids into n-6 lipoxygenase (arachidonate 15-lipoxygenase) products: 15-hydroxyeicosapentaenoic acid (15-HEPE) and 17-hydroxydocosahexaenoic acid (17-HDHE), resp. Since 15-lipoxygenase products have been suggested to be possible endogenous inhibitors of 5-lipoxygenase (an enzyme which catalyzes the formation of LTB4), the ability of 15-HEPE and 17-HDHE in vitro to inhibit the activity of the 5-lipoxygenase was tested. Incubations of these metabolites with enzyme prepns. from rat basophilic leukemia (RBL-1) cells demonstrated that 15-HEPE (50% inhibitory concentration (IC50) = 28 μM) and 17-HDHE (IC50 = 25 μM) are potent inhibitors of the RBL-1 5-lipoxygenase. The inhibitory potential of these **fish** oil metabolites provides a possible mechanism by which **fish** oil might act to decrease local cutaneous levels of LTB4, and thereby alleviate psoriatic symptoms.

IT Psoriasis
(therapy of, anti-inflammatory metabolite formation from polyunsatd. fatty acids of **fish** oil in epidermis in relation to)

IT Skin, metabolism
(epidermis, anti-inflammatory metabolite formation from polyunsatd. fatty acids of **fish** oil in, psoriasis therapy in relation to)

IT Oils, glyceridic
RL: BIOL (Biological study)
(**fish**, in psoriasis therapy, anti-inflammatory metabolite formation from polyunsatd. fatty acids in skin epidermis in relation to)

IT Fatty acids, biological studies
RL: BIOL (Biological study)
(polyunsatd., n-3, of **fish** oil, anti-inflammatory metabolite formation from, in skin epidermis, psoriasis therapy in relation to)

IT 80619-02-9, 5-Lipoxygenase
RL: BIOL (Biological study)
(**fish** oil polyunsatd. fatty acid metabolites inhibition of, in skin epidermis, psoriasis therapy in relation to)

IT **18104-45-5** 54845-95-3 70608-72-9 88852-33-9 90780-52-2
RL: FORM (Formation, nonpreparative)
(formation of, from polyunsatd. fatty acids of **fish** oil in skin epidermis, LTB4 formation inhibition and psoriasis therapy in relation to)

IT 71160-24-2, Leukotriene B4
RL: FORM (Formation, nonpreparative)
(formation of, in skin epidermis, polyunsatd. fatty acids of **fish** oil effect on, psoriasis therapy in relation to)

IT 6217-54-5, Docosahexaenoic acid 10417-94-4, Eicosapentaenoic acid

RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(metabolism of, by skin epidermis, **fish** oil therapy for psoriasis in relation to)

IT 82249-77-2, Arachidonate 15-lipoxygenase
RL: BIOL (Biological study)
(polyunsatd. fatty acids of **fish** oil metabolism by, in skin epidermis, LTB4 formation inhibition and psoriasis therapy in relation to)

L24 ANSWER 8 OF 32 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1990:197018 CAPLUS
DOCUMENT NUMBER: 112:197018
TITLE: Induction of epidermal hyperproliferation by topical n-3 polyunsaturated fatty acids on guinea pig skin linked to decreased levels of 13-hydroxyoctadecadienoic acid (**13-HODE**)
AUTHOR(S): Miller, Craig C.; Ziboh, Vincent A.
CORPORATE SOURCE: Sch. Med., Univ. California, Davis, CA, 95616, USA
SOURCE: Journal of Investigative Dermatology (1990), 94(3), 353-8
CODEN: JIDEAE; ISSN: 0022-202X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Reversal of essential fatty acid deficiency (EFA)-induced epidermal hyperproliferation was recently suggested to require linoleic acid and an active lipoxygenase product. Because the nature of this lipoxygenase product is unknown, a model of n-3 polyunsatd. fatty acid (PUFA)-induced hyperproliferation in guinea pig skin was employed to test a possible reversal of the hyperproliferation by an oxidative metabolite of linoleic acid. Topical applications of two n-3 PUFA, 0.5% of eicosapentaenoic acid (20:5n-3) and(or) of docosahexaenoic acid (22:6n-3) for 5 days induced severe epidermal hyperproliferation. Development of the epidermal hyperproliferation paralleled a marked decrease in the major epidermal linoleic acid lipoxygenase product, **13-HODE**. The application of 0.1% of **13-HODE** to the n-3 PUFA-induced guinea pig hyperproliferative skin resulted in the restoration of normal epidermal histol. and reversal of hyperproliferation as determined by epidermal uptake of 3H-thymidine. These data support the view that **13-HODE** may represent the endogenous cutaneous mediator necessary for full restoration of cutaneous symptoms of essential fatty acid deficiency. Furthermore, the topical use of n-3 PUFA for the disruption of normal metabolism of skin n-6 EFA (linoleic acid) does serve as a useful tool for further investigations into the regulatory mechanisms of in vivo epidermal proliferation/differentiation.

IT Phospholipids, biological studies
RL: BIOL (Biological study)
(fatty acids of, of skin epidermis, topical application of ω **-3** fatty acids effect on, epidermal hyperproliferation in relation to)

IT Deoxyribonucleic acid formation
(in skin epidermis, topical application of ω **-3** fatty acids effect on, epidermal hyperproliferation in relation to)

IT Fatty acids, biological studies
RL: BIOL (Biological study)
(of neutral lipids and phospholipids, of skin epidermis, ω **-3** fatty acid topical application effect on, epidermal hyperproliferation in relation to)

IT Skin, disease or disorder
(epidermis, hyperproliferation, from ω **-3** polyunsatd. fatty acid topical application, hydroxyoctadecadienoic acid formation in relation to)

IT Fatty acids, biological studies
RL: FORM (Formation, nonpreparative)
(hydroxy, formation of, in skin epidermis, topical application of ω **-3** fatty acids effect on, epidermal hyperproliferation in relation to)

IT Lipids, biological studies
RL: BIOL (Biological study)
(neutral, fatty acids of, of skin epidermis, topical application of ω **-3** fatty acids effect on, epidermal hyperproliferation in relation to)

IT Fatty acids, biological studies
RL: BIOL (Biological study)
(polyunsatd., n-3, epidermal hyperproliferation response to topical application of, hydroxyoctadecadienoic acid formation in relation to)

IT 54845-95-3, 15-HETE
RL: FORM (Formation, nonpreparative)
(formation of, in skin epidermis, topical application of ω -3 fatty acids effect on, epidermal hyperproliferation in relation to)

IT **18104-45-5**
RL: FORM (Formation, nonpreparative)
(formation of, in skin epidermis, topical application of ω -3 polyunsatd. fatty acids effect on, hyperproliferation in relation to)

IT 112-80-1, 9-Octadecenoic acid (Z)-, biological studies 557-59-5, Tetracosanoic acid
RL: BIOL (Biological study)
(of neutral lipids and phospholipids, of skin epidermis, ω -3 fatty acid topical application effect on, epidermal hyperproliferation in relation to)

IT 6217-54-5, Docosahexaenoic acid 10417-94-4, Eicosapentaenoic acid
RL: BIOL (Biological study)
(skin epidermis hyperproliferation response to topical application of, hydroxyoctadecadienoic acid formation in relation to)

L24 ANSWER 9 OF 32 CAPLUS

L24 ANSWER 3 OF 32 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
ACCESSION NUMBER: 1999:213442 BIOSIS
DOCUMENT NUMBER: PREV199900213442
TITLE: High-performance liquid chromatography and spectroscopic studies on **fish** oil oxidation products extracted from frozen Atlantic mackerel.
AUTHOR(S): Saeed, Suhur; Howell, Nazlin K. [Reprint author]
CORPORATE SOURCE: School of Biological Sciences, University of Surrey, Guildford, Surrey, GU2 5XH, UK
SOURCE: Journal of the American Oil Chemists' Society, (March, 1999) Vol. 76, No. 3, pp. 391-397. print.
CODEN: JAOCA7. ISSN: 0003-021X.
DOCUMENT TYPE: Article
LANGUAGE: English
ENTRY DATE: Entered STN: 26 May 1999
Last Updated on STN: 26 May 1999

AB The formation of stable hydroxy derivatives from hydroperoxides produced during the oxidation of linoleic acid methyl ester and **fish** oil were studied by reverse-phase high-performance liquid chromatography (HPLC), gas chromatography-mass spectrometry (GC-MS) and 13C nuclear magnetic resonance (NMR) spectroscopy. The oxidation products identified were mixtures of four isomeric hydroxy derivatives: 13-hydroxy-9-cis,11-trans-octadecadienoic,13-hydroxy-9-trans,11-trans-octadecadienoic, 9-hydroxy-10-trans,12-cis-octadecadienoic, and 9-hydroxy-10-trans,12-trans-octadecadienoic acids. The presence of hydroxy compounds was confirmed by 13C NMR, which gave rise to a hydroxy carbon peak at 87 ppm, and by GC-MS, which showed three peaks corresponding to isomeric mixtures of trimethylsilyl ethers of the oxidized linoleic acid methyl ester. The mass spectra scans of the three peaks showed that they represent isomers of molecular weight 382 and are consistent with the molecular formula C22H42O3Si. In oil extracted from stored frozen mackerel, **13-hydroxy-9-cis,11-trans-octadecadienoic acid** was more prominent compared to the model lipid systems. HPLC offered a sensitive means of detection of hydroxy compounds produced both in the initiation and latter stages of oxidation. The effect of antioxidants added to the **fish** mince prior to storage can also be monitored by HPLC. Thus, the monitoring of lipid oxidation hydroxy derivatives by HPLC is of practical value in the efficient processing and quality control of **fish**, **fish** oils, and other fatty foodstuffs in order to enhance the acceptability, nutritional, and safety aspects.

IT Major Concepts
Foods
IT Chemicals & Biochemicals
fish oil oxidation products: analysis; **13-hydroxy-9-cis,11-trans-octadecadienoic acid**; 13-hydroxy-9-trans,11-trans-octadecadienoic acid; 9-hydroxy-10-trans,12-cis-octadecadienoic acid; 9-hydroxy-10-trans,12-trans-octadecadienoic acid
IT Methods & Equipment
gas chromatography-mass spectrometry: analytical method; high performance liquid chromatography: analytical method, liquid chromatography; NMR: analytical method, imaging techniques, spectroscopic techniques: CB, spectroscopic techniques: CT
IT Miscellaneous Descriptors
Atlantic mackerel: frozen, seafood
ORGN Classifier
Osteichthyes 85206
Super Taxa
Pisces; Vertebrata; Chordata; Animalia
Organism Name
Scomber scombrus [Atlantic mackerel]
Taxa Notes

Animals, Chordates, **Fish**, Nonhuman Vertebrates, Vertebrates

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Scomber scombrus [Atlantic mackerel]
Taxa Notes

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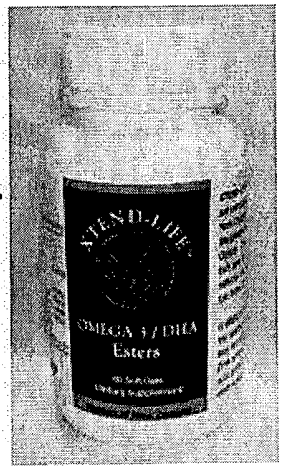

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n-3 fatty acids in psoriasis.

Mayser P, Grimm H, Grimminger F.

Department of Dermatology and Andrology, Justus Liebig University, Giessen, Germany. Peter.Mayser@derma.med.uni-giessen.de Increased concentrations of free arachidonic acid (AA) and its proinflammatory metabolites have been observed in psoriatic lesions. Replacement of arachidonic acid by alternative precursor polyunsaturated fatty acids (PUFA), especially eicosapentaenoic acid (EPA), which can be metabolized via the same enzymatic pathways as AA, might be a therapeutic option in psoriasis. However the results of studies evaluating

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the therapeutic benefit of dietary fish oil have been conflicting and not clearly dose-dependent. To overcome the slow kinetics and limited availability of oral supplementation, we have performed three studies to assess the efficacy and safety of an intravenously administered fish oil derived lipid emulsion on different forms of psoriasis. Patients received daily infusions of either an n-3 fatty acid-based lipid emulsion (Omegaven) or a conventional n-6 lipid emulsion (Lipoven) in different time and dose regimens. In addition to an overall assessment of the clinical course of psoriasis, EPA- and AA-derived neutrophil 5-lipoxygenase (LO)–products, thromboxane (TX) B2/B3, PAF and plasma free fatty acids were investigated. Treatment with n-3 fatty acids resulted in a considerably higher response rate than infusion of n-6 lipids. A more than 10-fold increase in neutrophil EPA-derived 5-LO product formation was noted in the n-3 group, accompanied by a rapid increase in plasma-free EPA within the first days. In conclusion, intravenous n-3-fatty acid administration causes reduction of psoriasis, which may be related to changes in inflammatory eicosanoid generation. The rapidity of the response to intravenous n-3 lipids exceeds by orders of magnitude the hitherto reported kinetics of improvement of psoriatic lesions upon use of oral supplementation.

Publication Types:

- Review
- Review, Tutorial

PMID: 11895157 [PubMed - indexed for MEDLINE]

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Effects of micronutrient supplements on u.v.-induced skin damage.

Jackson MJ, Jackson MJ, McArdle F, Storey A, Jones SA, McArdle A, Rhodes LE.

Department of Medicine, University of Liverpool, Liverpool L69 3GA, UK. mjj@liv.ac.uk

Development of an orally-administered systemic agent that could reduce the effects of u.v. exposure on skin could potentially have a major effect on the incidence of skin cancers and photo-ageing. A number of micronutrients have been suggested to have metabolic properties that could induce this protection, and our data indicate that n-3 polyunsaturated fatty acids are particularly effective in this role. The mechanisms of action of n-3 polyunsaturated fatty acids appear to depend on their anti-inflammatory properties, acting to reduce the u.v.-induced release of cytokines and other mediators from a variety of skin cell types.

Publication Types:

- Review
- Review, Tutorial

PMID: 12133200 [PubMed - indexed for MEDLINE]

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The significance of polyunsaturated fatty acids in cutaneous biology.

Ziboh VA.

Department of Dermatology, University of California, Davis, USA.

The skin epidermis displays a highly active metabolism of polyunsaturated fatty acids (PUFA). Dietary deficiency of linoleic acid (LA) and 18-carbon (n-6) PUFA results in characteristic scaly skin disorder and

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excessive epidermal water loss. Arachidonic acid, a 20-carbon (n-6) PUFA is metabolized via the cyclooxygenase pathway into predominantly prostaglandin E2 (PGE2) PGF2 alpha, and PGD2 and via the lipoxygenase pathway into predominantly 15-hydroxyeicosatetraenoic acid (15-HETE). The prostaglandins modulate normal skin physiological processes at low concentrations and inflammatory reactions at high concentrations. Similarly, the very active epidermal 15-lipoxygenase transforms dihomogammalinolenic acid (DGLA) into 15-hydroxy eicosatrienoic acid (15-HETrE), eicosapentaenoic acid (EPA) into 15-hydroxyeicosapentaenoic acid (15-HEPE) and docosahexaenoic acid (DHA) into 17-hydroxydocosahexaenoic acid (17-HDoHE), respectively. These monohydroxy acids exhibit anti-inflammatory properties. In contrast, the 18-carbon (n-6) PUFA is transformed into 13-hydroxy-9,11-octadecadienoic acid (**13-HODE**), which exerts antiproliferative properties in the tissue. Thus, the supplementation of diets with appropriate purified vegetable oils and/or fish oil may generate local cutaneous anti-inflammatory metabolites which could serve as a less toxic in vivo monotherapy or as adjuncts to standard therapeutic regimens for the management of skin inflammatory disorders.

Publication Types:

- Review
- Review, Tutorial

PMID: 8729128 [PubMed - indexed for MEDLINE]

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